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ABSTRACT

A picture-board sociometric interview for preschool children is described and information on reliability and validity is presented. While the reliability of this measure of peer popularity is low to moderate using test-retest or split-half measures, the interview data does seem to predict other relevant measures of the social behavior of young children in interaction with their peers. It should be pointed out that sociometric status and the social characteristics of these children are not completely independent measures since the children themselves were the source of both kinds of information. Nevertheless, the relations are in predicted directions and tend to be consistent with the observational data presented in this paper. Also included are the instruments used during the interview: The Sociometric Interview and the Peer Perception of Social Behavior. (Author/DEP)

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A SOCIOMETRIC STATUS TEST FOR YOUNG CHILDREN

MANUAL OF INSTRUCTIONS

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1973

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A Sociometric Status Test for Young Children:

Manual of Instructions

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Description and development of the test

The sociometric status test described in this paper was developed to obtain measures of peer acceptance and peer rejection of young children attending nursery schools, day care centers and other group programs. The test is an adaptation of one originally developed by McCandless and Marshall (1957) and is based on the peer nominations of each of the children in a school or center group. Sociometric selections are made during individual interviews in which the child being interviewed indicates his choices from an array of head-and-shoulder photographs of members of the peer group. The test takes seven or eight minutes to administer. Children of three-and-one-half to four years of age seem to understand the instructions and are interested in the task.

The picture-interview format of this test has several advantages over other methods of eliciting sociometric choices from young children. The interview was used rather than direct classroom observations for reasons of economy and also because observations of actual peer interactions may be determined by factors other than peer preferences; a child may admire a member of the peer group but have little opportunity to play with that person unless the admiration is mutual. Peer nominations were preferred over teacher-ratings of peer popularity to avoid the possibility of sociometric scores reflecting teachers' preferences, rather than the preferences of the children.

A picture-board method of presentation that includes a photograph of each member of a class or group was preferred over other interview techniques

for two reasons. First, the display of pictures makes it unnecessary for a child to respond verbally since choices can be made by pointing. The children being interviewed need not remember, nor even know, all of the names of the children in their group in order to indicate their preferences. Second, it was felt that presenting the full array of pictures of group members would help to call a child's attention to each member of the group, reducing the tendency of young children to spontaneously name the last person with whom they have been playing when asked to name peer preferences.

In the original McCandless and Marshall sociometric test, only preferred, or "liked" choices were elicited; in this adaptation, the children are asked to make both positive ("liked") and negative ("disliked") choices. It was decided that negative as well as positive choices should be obtained on the assumption that negative sociometric choices would predict social behaviors that are not necessarily related to positive sociometric choices. Also a sociometric test which yields liked choices only does not allow the tester to distinguish children who are social isolates from those who are actively disliked by their peers, despite the fact that the correlates or determinants of the sociometric status of these two groups may be quite different. The distinction between social isolate status and disliked status is an important one from a practical standpoint since teachers and parents are typically more concerned about the child whose behavior is noxious to peers causing them to dislike him than they are concerned about the preschooler who is somewhat shy and withdrawn in the peer group. This latter group may appear to be socially immature or inexperienced, but they do not usually appear to have social problems that are in need of intervention.

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There are obvious ethical considerations that must be faced by experimenters and teachers in asking children to identify members of the peer group that they do not like since this procedure contradicts the adults' usual disposition to discourage children from making rejecting statements about their companions. One concern in using this kind of sociometric measure is the possibility of a child's announcing his negative choices to their recipients or others after he returns to his group. It has been found, however, based upon many administrations of the test over a period of years, that children do not discuss their choices in the nursery school room. Occasionally a child will tell another that he or she has seen a companion's picture but there have been no instances in which a child systematically communicated choices to others or seemed preoccupied with the choices he had made. As a compensation for its risks, the advantage of a sociometric test which yields negative as well as positive choices is the increased likelihood of identifying the children who are having serious trouble with their peers.

Preparation of the picture-board.

Sociometric data should be gathered at a time when most of the children are well acquainted with each other. For groups that assemble in the fall, the spring of the year is best. Previous to the administration of the sociometric interviews a head-and-shoulder snapshot must be taken of each child in the group. A place away from the group (such as an office or hallway) is needed to facilitate this operation. Ideally the camera should be mounted on a tripod, table or shelf a standard distance from a chair in which the child sits to be photographed. This assures that the pictures

of the children will be face-forward and about the same in head size. An ideal sociometric picture is one that is pleasant but somewhat neutral in expression. Pictures that are too socially salient (laughing or giggling, for example) or that suggest anger, distress or grouchiness may bias the children's choices and should be retaken.

If the children are self-conscious and reticent about having their pictures taken they may be more willing to be photographed with companions near. If this is the case, three or four children can be brought together to the place where pictures are to be taken. They may be asked to watch a particularly willing child have his picture taken or they may be invited to sit or stand near the person whose picture is being taken, each one taking his turn on the chair that is within range of the mounted camera.

When pictures have been obtained of all of the children in the group, they are mounted on a cardboard or a plywood board approximately 18" by 24" in size (or larger if necessary). The pictures should be mounted in such a way that they can be moved about easily between interviews so that no child's picture is always in a given position on the board, thus biasing the likelihood of his being chosen by his companions. The child's name (and nickname if he has one) can be placed under or over each picture unless the interviewer is thoroughly familiar with the names of the children in the group.

The picture-board should be mounted on a tripod or supported upright on a table so that a child seated before the board can easily see and point to any of the photographs.

Interview procedure.

After a brief period of time for gaining rapport with the children to

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be tested, the children should be brought individually to a quiet place away from intrusion from the group to be interviewed. The child should be seated comfortably in front of the picture-board; the interviewer should be seated next to the child and slightly behind him. The interviewer should have a prepared form for recording the child's choices. The interview instructions are as follows:

> "You know all of these people, don't you--they are from your group (school, day care center, nursery school). Let's see how many you can name--who is this?" (Point to the upper left-hand picture.) If the child does not answer immediately, say "That's (name) isn't it?" and go directly on to the next picture. Do not linger over each picture or urge the child to name each member of the group but be sure that the child is attending to the task and looking at each picture as the person is identified.
>
> If the child mis-names a picture, clarify the mistake by repeating the correct name twice, "This child is Billy isn't it--his name is Billy." If the child appears to have confused two children in the group, refer to both children in your statement of clarification, "This child is Billy--here is Jim! This is Jim's picture and this is Billy's picture."
>
> If the child is not following along looking at each picture as it is identified, call his attention to the task by asking him to "Look right here (name)--who is this?....etc."
>
> After all of the pictures have been named, say "Now I want you to look over all of these children and find someone you especially like at school--remember, someone you especially like." If the child ponders his decision, quietly repeat, "Someone you especially like." If the child seems reticent to indicate his choice by pointing or naming a child, tell him "You may point if you like--remember, someone you especially like." When the child makes his first liked choice, record it.
>
> Then say "OK, now find another child (person) you especially like." This statement should be delivered casually and lead promptly into the next choice. Avoid variations such as "good", "fine", "that's right", etc. that may imply assessment or approval of the child's choice. You may, however, repeat his choice ("Johnny--OK, now find another child...etc."). Record Ss second liked choice.
>
> Then say "OK, now find another (one more) child you especially like." Record Ss third liked choice.

Then say "Now this time I want you to find someone you don't like very much at school--remember this time find someone you don't like very much." Record Ss first disliked choice.

Then say "OK, now find another child that you don't like very much." Record Ss second disliked choice.

Then say "OK, now find another (one more) child (person) that you don't like very much." Record Ss third disliked choice.

Then say "We're all finished now. Thank you very much for helping me--you did a very good job"...or some similar statement. The child can now be returned to his group.

At the completion of the interview, children may be given a small reward for performing, such as a cookie, small trinket or toy. Children do enjoy this task, however, and are quite willing to complete it without incentives of this kind. In any case, be sure to thank the child for his cooperation and help.

It is not necessary, with children of this age, to reassure the child that his choices will be confidential. Confidentiality does not seem to concern the children and it is doubtful that they would understand the meaning of such a statement.

In preparation for the next interview, the position of the sociometric pictures on the board should be changed so that a child's score is not unduely biased by his placement on the picture-board. Corner pictures (which may tend to be overlooked) and the bottom row of pictures (which tend to be easy choices) should be distributed around in the middle of area of the board. Others should be shuffled around and randomly mounted in the remaining places. If it facilitates the administration of the test, the child whose interview has just been completed may be asked to wait while the board is made ready for the next child.

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General procedureal suggestions.

The atmosphere during the interview should be friendly but business-like. The interviewer should give the impression that we must get on with the task! If a child seems to want to talk and begins to tell about something he did at home or at school, say "Oh, did you--OK now (name), let's look at these pictures...etc." (You may wish to come back to a conversation after the interview is over--as you are taking the child back to his group--so that you do not appear to be unfriendly or disinterested.)

Occasionally a child points very timidly seeming to consider only pictures that are closest to his hand while it rests on the table. If the interviewer suspects that this is happening, record the choice, but preface the next request with a statement like "Remember (name), you will need to look them all over and find someone you especially like. Look all around at the pictures (indicating with hand) and then decide who you especially like...etc."

Occasionally a child makes quick responses that appear to be without thought or consideration. These children may not completely understand the instructions or they may interpret the task as a "guessing game" in which they point to a picture and the interviewer will tell them whether or not they are correct. If it is suspected that the child is not making considered choices, say "You'll need to listen carefully to what I say before you decide--I want you to find someone you especially like...etc."

Children sometimes select a picture more than once for the same item. Say "Find another person you especially like." If, on the other hand, the child selects a person as a liked choice and as a disliked choice, accept it; the child may, in fact, be ambivalent about that peer.

If a child spontaneously names or points to more than one picture for a given choice, say "Which one do you want to pick as the person you especially like?" (If the child has not already made three choices, you may take the option of recording both selections as two of his three choices and asking for only one more. You may also choose to ignore his second selection for a given question and record only the first child he names or points to.)

If the child selects his own picture as a liked peer, say "It's good that you like yourself, but I want you to find someone else that you especially like." If the child persists in selecting himself, say "Not your picture (name), someone else's that you especially like." (It is extremely rare in our experience, for a child to name himself as a "disliked" peer.) Selection of one's own picture can be avoided by leaving the picture of the child to be interviewed off of the board. When that is done, however, children tend to ask where their picture is and become preoccupied with its absence.

Scoring procedures.

Each positive (liked) choice and each negative (disliked) choice is given a value of 1. A child's sociometric score is the number of times he has been mentioned by his peers as a liked choice, minus the number of times he has been mentioned as a disliked choice. It is possible, of course, to consider only the positive sociometric choices or only the negative choices for analyses in which that breakdown is desired.

Children's choices can also be weighted according to whether the nomination is a first, second or third choice. For example, plus or minus 3 points may be given to a first choice nominee, plus or minus 2 points to

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a second choice nominee and plus or minus 1 point to a third choice nominee. Analyses with six different test administrations, however, have shown that weighted and unweighted scores correlate between .92 and .98 with each other; the simplified, unweighted scoring system would seem to yield sociometric rankings very similar to those in which weighted scores are used.

It should be noted that subtracting negative nominations from positive nominations leaves some children with a negative balance. For most analyses, a constant must be added to the score of each child in the group to eliminate negative numbers.

An additional interesting and useful sociometric score can be obtained by combining positive and negative scores additively rather than subtracting the negative score from the positive score. The additive score gives a general measure of "impact" of a child on his peers. A child with many nominations--both positive and negative--would seem to be having a sizable social impact on his peers while a child with very few nominations of either kind is having a minimal impact on his peers. Yet, using a scoring procedure in which negative nominations are subtracted from positive nominations, it is possible for these two kinds of children to obtain virtually identical sociometric scores.

Reliability

To check the reliability of sociometric scores, three groups of children each consisting of from 18 to 24 children were administered the sociometric test twice with from one to two weeks between administrations (Moore & Updegraff, 1964). Product-moment correlations between the pairs of scores for each group were obtained. The coefficients for all three groups were

reliable well beyond chance; nevertheless, the magnitude of the correlations is modest. For one group, in which the children ranged in age from 3.2 to 3.10 at the time of testing, the correlation was .62 ($p < .01$). A second group, in which the children ranged in age from 3.10 to 4.11, yielded a correlation of .52 ($p < .02$). For a third group, in which children ranged in age from 4.6 to 5.6, the correlation was .78 ($p < .01$). All groups had been in session for approximately seven months at the time of testing. The data indicate that test-retest reliability is the most acceptable with the older children; interviews with the younger children seem to be more subject to inconsistencies.

It should be pointed out that inconsistency in sociometric scores from one administration to another may be due to other factors than capricious choices by the children. The best guess from those who observe young children in groups is that the sociometric status of the children does indeed change even over short periods of time. The instability of the children's sociometric scores may be due in part to these changes. Also a child may select a different array of liked and disliked peers on his second test administration (thus contributing to a change in the sociometric status of the children involved) yet be making valid choices both times. Since each child is allowed only three liked and three disliked choices, his second array of choices may include still other children he likes or dislikes.

Split-half reliability was also calculated for four groups of children in which sociometric scores for the children in a group as determined by a random half of the group is compared with socres as determined by the other half. For the four groups product-moment correlations were .27, .34,

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.61 and .70. The number of children in each of these groups averaged 18 so that the scores used in calculating these correlations were based on the choices of only 9 children. One might expect greater reliability for groups of children ranging in size from 20 to 30.

Despite the low reliability of these interview measures with young children, sociometric status scores appear to have reasonable validity as is indicated by studies in which status is related to other relevant peer interaction measures.

Validity of sociometric scores

The validity of peer preferences is difficult to check directly since measures against which choices can be compared (such as teacher ratings of popularity or classroom observations of "time spent together") are effected by factors other than peer preferences. There are, however, two kinds of data that appear to indirectly validate the sociometric interviews: classroom observations of peer interactions, and children's judgments of the social characteristics of their peers.

At the University of Minnesota, extensive classroom observations of peer interactions were made during free play in groups of children attending the Laboratory Nursery School during the 1965-66 school year (Charlesworth & Hartup, 1967; Hartup, Glazer & Charlesworth, 1967). For this research children's observed social behaviors were classified as either positive social reinforcement or negative social reinforcement. Positive social reinforcement included such behaviors as giving attention or approval, giving affection, indicating acceptance, imitating another, willingly complying with another's requests, and giving tokens of friendship. Negative social reinforcement included such behaviors as denying participation, refusing to

share or cooperate, igroring, criticizing, insulting, blaming, tattling, demanding, annoying, attacking or threatening. When the sociometric scores of the children were correlated with the frequencey of positive and negative reinforcement, it was found that children receiving many "liked" sociometric choices, compared with those receiving few, were significantly more likely to use positive social reinforcement in dealing with peers, the correlations for three replications being .70, .67 and .61. On the other hand, children receiving many "disliked" choices, compared with those receiving few, were significantly more likely to use negative social reinforcement in two of three replications, the correlations being .28, .73 and .80. On the assumption that positive social reinforcement from peers is pleasant to children and that negative social reinforcement is noxious, one would predict associations of these kinds between social reinforcement and sociometric status.

A classroom observation study was also conducted at the University of Iowa by Moore & Updegraff (1964) in which three groups of children who had been administered the sociometric interview were also observed during free play in the nursery school. Two kinds of behaviors were recorded: nurturance-giving and dependence. Nurturance-giving included giving affection, giving attention, giving reassurance and offering protection. When scores on this measure were related to sociometric scores, correlations for the three groups of children were .20, .49 and .29 (combined r significant between the 5% and 10% levels of confidence). Though the relation is not a clearly reliable one, it is consistent across groups and in the predicted direction.

The dependent behavior of the children in these groups was also related to sociometric status. Categories of dependence included help-seeking

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affection-seeking and support-seeking. In recording instances of dependence, observers also noted whether a child's dependent overtures were addressed to an adult, or to a peer. When adult dependence was correlated with popularity, a significant negative relation was found for the youngest group of children only, the correlation being -.55 ($p < .05$). The correlations for the older two groups of children were zero-order. It would appear, from this evidence, that adult-oriented dependence has little relevance to peer popularity with older preschoolers, though for the younger children (for whom dependence is greater overall) high need for adult help, affection and support may interfer with peer popularity.

The data on peer-oriented dependence in this study suggests a different picture. When this measure was correlated with popularity the coefficients were modest but positive in direction, being .14, .35 and .40 for the three groups, (combined r significant between the 5% and 10% levels of confidence). For these groups, children who scored high on peer dependence tended to be among the more popular children compared with those low in peer dependence. It would seem that peer dependence did not interfer with popularity in these groups and may, in fact, have facilitated it.

One additional source of data provides indirect validation of sociometric status using the picture-board interview. In a study conducted at the University of Minnesota (Moore, 1967), the sociometric status of preschool children was related to peer judgments of social characteristics. In addition to the sociometric choices, children were asked to respond to 30 statements each of which described a typical child-like social behavior. The child was asked to name or point to a member of his group to whom he thought each statement applied. The statements described various aspects

of children's social behavior such as friendly approach, aggression, compliance in routines, expressed fear and expressed anxiety. A score was calculated for each child on each of these dimensions based on the number of times his peers thought that a statement applied to him. Three of the five clusters of social behaviors consistently related to sociometric status over a series of test administrations: friendly interaction, aggression, and compliance in routines. Friendly interaction was assessed by asking children to indicate a member of the peer group who is friendly to other children, likes to play near others, helps other children when they are hurt or sad, and talks with other children a lot. (To reduce the halo effect, the "friendly" items were distributed throughout the 30-item interview rather than presented in a block.) Correlations between friendly behavior and sociometric status for six different groups of preschool children ranged from .24 to .48. Though the correlations are not large, the consistency of this relation from group to group suggests that friendliness as perceived by peers is one of the accompaniments of popularity.

Peer judgment of aggression was measured by asking the children to nominate peers who fight a lot, hit without reason, yell at teachers, say angry things, and hurt others. Scores on this cluster of items correlated negatively with popularity, the six correlations ranging from -.21 to -.78 with three of the six being greater than -.50.

Peer judgment of compliance in routines was assessed by asking the children to nominate peers who are good workers at school, don't fuss about things but do what the teacher says, dress and toilet fast, and help to put things away. When these items were related to sociometric status, correlations for the six groups of children ranged from .21 to .67, indi-

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cating that children whose peers judged them to be high in compliance were also high in popularity.

It should be pointed out that sociometric status and the social characteristics of these children are not completely independent measures since the children themselves were the source of both kinds of information. Nevertheless, the relations are in predicted directions and tend to be consistent with the observational data presented previously.

In summary, a picture-board sociometric interview for preschool children was described and information on reliability and validity was presented. While the reliability of this measure of peer popularity is low to moderate using test-retest or split-half measures, the interview data does seem to predict other relevant measures of the social behavior of young children in interaction with their peers.

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NAME _____ DATE _____ GROUP _____

Sociometric interview[1]

You know all of these people, don't you--they're from your group, etc. Let's see how many you can name--who is this (pointing to the upper left corner child). If he doesn't answer immediately, say that is so-and-so, isn't it. Make sure he looks, if not, repeat.

_____ Now, I want you to look over all of these children and find someone you especially like--remember--someone you especially <u>like</u> (if necessary add -- look them over carefully. If time elapses repeat, remember, someone you especially like.)

_____ After his choice: "OK, now find another child you especially like."

_____ After second choice: "OK, now find one more child you especially like." (It might be necessary to remind the child he can "just point" if he wants to.)

_____ OK, now find someone you don't like very much at school--remember, someone you don't like very much.

_____ OK, now find <u>another</u> child you don't like very much.

_____ OK, now find one more child you don't like very much.

We're finished now. You did a good job etc....

[1] The <u>Peer Perception of Social Behavior</u> form attached can be given along with the <u>Sociometric Status Test</u> if desired.

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Peer Perception of Social Behavior

Name _____ Date _____ Group _____

_____ Find someone who especially likes to stay near the teachers

_____ Find someone who fights a lot

_____ Find someone who is very friendly to the other children

_____ Find someone who is fast at dressing and toileting

_____ Find someone who is afraid of lots of things

_____ Find someone who runs from one thing to another all the time

_____ Find someone who hits even without a good reason

_____ Find someone who likes to play near other children

_____ Find someone who helps kids when they're hurt or sad

_____ Find someone who is a good worker at school

_____ Find someone who is not afraid of anything

_____ Find someone who likes to do things all alone

_____ Find someone who would hit or yell at a teacher

_____ Find someone who likes to get help from the teachers instead of from other children

_____ Find someone who says angry things

_____ Find someone who never likes anyone else's ideas

_____ Find someone who talks with the other children a lot

_____ Find someone who might hurt you

_____ Find someone who fusses about toileting or dressing

_____ Find someone who won't put things away at school

_____ Find someone who likes to get help from other children instead of from teachers

_____ Find someone who scares you

_____ Find someone who doesn't like fighting or shouting

_____ Find someone who doesn't need help from anyone

_____ Find someone who won't do what the teacher says

_____ Find someone who runs around the most

_____ Find someone who won't take turns

_____ Find someone who cries a lot

_____ Find someone who teases people

_____ Find someone who always wants to be the best

_____ Find someone who doesn't hit even if someone else hits first

_____ Find someone whose name is _____(child's name)

THE END

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